dhm RESEARCH
DAVIS, HIBBITTS & MIDGHALL, INC.

PREPARED FOR:

WILLAMETTE WATER SUPPLY PROGRAM

Beaverton Focus Group Research

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1. INTRODUCTION & METHODOLOGY

Davis, Hibbitts & Midghall, Inc. (DHM Research) conducted two focus groups, in partnership with Barney & Worth, Inc., with residents of Beaverton. The primary objectives of the research were to assess voters' attitudes about the construction of a new water pipeline and water reservoir in Beaverton. The results of the focus groups will inform public information and engagement efforts.

Research Design: The groups were held on Saturday, July 26, 2014, in Beaverton. A total of 16 people participated and all were Beaverton water customers. See Appendix A for complete study demographics.

The focus groups were led by a professional moderator and consisted of both written exercises and group discussions. Although research of this type is not designed to measure, with statistical reliability, the attitudes of a particular group, it is valuable for giving a sense of the attitudes and opinions of the population from which the sample was drawn.

This memo highlights key findings from the discussions. Each section reviews a major topic from the group discussions and includes representative quotations, as well as evaluative commentary. The quotes and commentary are drawn from both written exercises and group discussions.[1] The referenced Appendices provide the complete responses to all written exercises.

DHM Research: Davis, Hibbitts & Midghall, Inc. has been providing opinion research and consultation throughout Oregon, the Pacific Northwest, and the nation for over three decades. The firm is non-partisan and independent and specializes in research projects to support community planning and public policy-making. www.dhmresearch.com

[1] Quotations were selected to represent the range of opinions regarding a topic, and not to quantitatively represent the expressed attitudes.

2. SUMMARY & OBSERVATIONS

Participants are currently pleased with their water.

- Beaverton's water compares favorably to water that participants have tasted in other cities.
- Participants voice some concerns over the cleanliness of water from Hagg Lake and lower Tualatin River, but in general, express few negatives about their water source.

While participants see value in long-term planning, they display considerable concern for immediate costs--in terms of both money and disruptions to their day-to-day lives (traffic or construction noise, for example).

- Participants cite construction and traffic as their biggest concerns for a water pipeline project, followed by cost issues.
- Similarly, when considering a potential water reservoir, people are most concerned about the immediate impact to their neighborhood: the need to relocate existing homes or buildings as well as traffic and noise related to the construction process.
- People do not want existing customers to shoulder the cost. Several comments referred to funding the project out of existing funds or worries about rate increases.

On the whole, participants value a very concrete, practical approach to the proposed water projects. People see a valid need for increased water access and are willing to put up with disruptions for the long-term good, as long as planners minimize disruption and maximize benefits.

- The most popular route option, placing a pipe in the ground at the same time a new road is being built, reflects the type of efficient planning that residents want to see. They also see it as desirable to undertake other improvements at the same time, such as moving utilities underground or upgrading sewer water lines.
- Participants consider tangible benefits the most important. For example, they value improved water supply, jobs or economic growth, financial benefit to city or customers, and infrastructure improvements.
- This is not to say that participants dismissed environmental or aesthetic issues. They in fact want both to be considered and would like to see plans that address both the practical needs and environmental or aesthetic needs.

People want clear understanding of the reasons behind the project, benefits, and the overall plan.

- Listening to the discussions as a whole, the general impression is that people want a transparent process.
- Participants seek clear information, evidence of a well-thought out plan, and opportunity for community members to provide input.

3. KEY FINDINGS

3.1 | Community Improvements

> *"Make Beaverton more pedestrian-friendly…More crosswalks across Millikan Way, more crosswalks across TV Highway, sidewalks on TV Highway."*
>
> *"I've always wanted to see a local rec center built that will keep kids out of trouble and gives them something fun to do."*
>
> *"School tuition lowered for higher ed; class size at public schools."*

The focus groups started with a written exercise asking the participants to list improvements that they would like for the local community. The participants had a wide range of suggestions. The improvements mentioned most frequently involved transportation, fostering a sense of community, and education (Appendix B).

Transportation. The most commonly-elicited improvements involved transportation. Participants listed multiple improvements related to transportation in Beaverton, although no one issue stood out as salient to most people. A few people were concerned with traffic and speed limits, others with the state of the roads. Clear markings of lanes, especially bike lanes, was brought up. Mass transit was mentioned as well; a specific improvement identified was parking at the Beaverton Transit Center.

Sense of Community. People mentioned a broad range of ideas related to building community cohesion. Some of those included improving the downtown Beaverton area with sidewalks or crosswalks. This partly was a public safety issue, but also the idea that the current structure "*divides the city and makes urban interaction difficult*." People seemed to want sidewalks and coffee shops to create a more social and "*fun*" downtown. A couple of people mentioned a recreation center or free or affordable recreational opportunities for young people. Neighborhood watch programs and investment in small local businesses that provide living-wage jobs are other ideas people had to foster a healthy community.

Education. Public education also came to mind for multiple participants. A few specific ideas mentioned were lower class size in public schools and more affordable higher education.

3.2 | General Evaluation of Drinking Water

> *"Beaverton water is the purest and best I've ever had anywhere in the world; those who manage it are terrific people."*
>
> *"It has a clear color, no taste, no smell."*
>
> *"I drink water from the tap every day. I think it's great. You know, I have been in a number of places…and the water that comes out of my tap is like ten times better than the water in any of those other places."*

No participant listed improvements to drinking water as a top concern for the community. When asked specifically to evaluate the quality of drinking water, the majority of participants viewed their drinking water positively. Most (thirteen) participants rated the water as very good or good (Appendix C). Beaverton water compared favorably to water people have had around the country and world. Multiple people brought up that unlike other nearby communities, they have not had to boil their water due to safety alerts. Generally speaking, people liked multiple qualities of the water: clear color, pleasant taste, no smell. A few people used a filter pitcher, or filter in their refrigerator, and others said they drink from the tap.

Three people rated the water as poor or very poor. One of these attributed the problem more to older pipes of the apartment complex rather than to the water per se. Another person said a young child in the house had gotten sick from the water when they had not heard a water alert in time.

3.3 | Source of Drinking Water

Participants identified the source of their drinking water and provided their opinions about the source (Appendix D). Ten participants thought their water came from reservoirs: five people named the Bull Run Reservoir, three named Hagg Lake (at least during the summer), and one person referred to the Sexton Mountain Reservoir. Three others identified river water, although only one person mentioned Tualatin River specifically.

Few people had any specific concerns about the source of their water. Five people reported positive opinions, and seven others did not note any opinion. Concerns noted revolved around clean sources of water. Two people noted that they want a non-polluted source, and one wrote, "*I feel that the Bull Run reservoir should be covered for safety*." One person wrote a caveat about the reservoir, "*If it is properly filtered*."

In the discussion, it was clear that people had concerns about both the Tualatin River and Hagg Lake as sources of water. One person's dog had gotten sick after swimming in Hagg Lake, another thought lower Tualatin River, at least, was susceptible to more pollutants. People in one group brought up the possibility of water being sourced from the Willamette

River water, but the group as a whole did not think Beaverton would get Willamette River water.

3.4 | Concerns about Water Pipeline

> "*One particular road in Beaverton, if you look at the utility maps, it's one of the main sources for water, for electricity, for sewage. Everything goes through that road, and it has called all sorts of logistical nightmare, trying to get it all to work*."

> "*How are you going to get around? How's that going to work? We've already got a pretty tight system as it is. There's already a lot of traffic congestion."*

Participants were read a statement outlining that some water utilities in Washington County plan to source water from the Willamette River to meet customer needs. These plans would require the installation of a new water pipeline. Participants identified issues or concerns they had about a new water pipeline (Appendix E). The most frequently mentioned concerns included construction-related disruptions, cost, and quality of water.

Disruption due to Construction. Eleven people mentioned disruptions related to the construction process. Traffic, specified by eight people, was the most commonly-listed concern. Other more general concerns included whether the pipeline would pass through private property, interfere with other public services or utilities, or disrupt current infrastructure.

In the discussion, people seemed accepting of the need to plan for the future. They expressed a willingness to put up with temporary disruptions now for long-term good, but wanted a clear understanding of the benefits and rationale for the project.

They also wanted reassurance that city planners would work actively to minimize disruption now and in the long-term. One person stated, "*Make the pipeline work the least destructive, yet with high safety concerns, and then two, make sure the quality and size of the pipeline is excellent because we don't mind temporary delays*." At different points throughout the discussion, participants mentioned avoiding tearing up or building roads for one project, then going back and doing so again for a different project.

Cost. Five people were concerned about the cost of the project. A few were concerned with how much of the cost existing customers would shoulder. Another issue brought up was whether it was an efficient use of money.

Quality of Water. Five people also expressed uneasiness over the quality of the water. Peopled voiced concerns about pollution in the Willamette River. A few people wondered how well the filtering process worked and whether the water would be safe and still taste nice. For one person, water safety included the idea that the pipelines would be safe from vandalism or intentional contamination of water supply.

3.5 | Water Pipeline Routes

Participants read several different scenarios concerning the placement of future water pipelines and indicated whether they viewed each positively or negatively (Appendix F). In addition, they wrote down any questions or comments. Overall, placing a pipe in the ground at the same time a new road is being built received the broadest support. Moderate support was seen for placing the pipe along an unimproved two-lane road bordered by farms and undeveloped land or placing the pipe under a pedestrian trail. No option received clear opposition, although tunneling under a busy intersection was received unfavorably. The criteria most mentioned by participants when evaluating the options included overall costs and disruption to travel. Participants also recognized that a major pipeline might go through multiple types of areas, such that the entire project might involve several of the options.

Route A—The pipe is placed under a wide boulevard with sidewalks and bike lanes. Two people underlined this option, indicating they viewed it positively. One person crossed it out, indicating a negative evaluation. Reactions included concerns about disrupting or blocking access for the people who live and work along the route. One person described it as "most disruptive." However, another noted that this probably places the pipeline closest to where the supply is needed.

Route B—The pipe is placed along an unimproved two-lane road. This route received five positive nominations and one strikethrough (negative). This was seen as a good option, balancing future benefits and less disruption currently. As one person noted, "*It's alongside a road, so you're not having deconstruction as well as construction as much. And in most cases, if it's undeveloped land, taking water to undeveloped land is more likely to allow that to be developed*."

There was some question in how to interpret this option. The word "along" was assumed by some to be aboveground, which wasn't necessarily seen as ideal in planning for future development. Others thought this option would mean an underground pipe as well.

Route C—The pipe is placed under a street in a neighborhood. Participants had lukewarm reactions to this option. Three people viewed it positively and no one crossed it out. In both groups, people voiced uncertainty about the potential nuisance to private home owners if there are problems with the pipeline, either property damage in case of leaks and breakage, or the city needing to come back and dig up property again for maintenance issues.

Route D—The pipe is placed under a frontage road bordered by a mix of businesses. Reaction to this option was rather muted and mixed. It received two positive nominations and two negative.

Route E—The pipe is placed under a pedestrian trail. This was one of the more well-received options. Five people viewed this positively and one person crossed it out. It was seen as less disruptive during the installation as well as in the future if repairs needed.

Route F—The pipe is placed in the ground at the same time a new road is built. Participants clearly favored this option. It received twelve positive nominations and one strikethrough. People did wonder whether combining projects would lengthen the disruption time or whether this was a realistic option. On the other hand, this was seen as efficient in terms of both labor and cost.

Route G—The pipe is placed under a two-lane road fronted by warehouses. Participants showed rather lukewarm reactions to this option also. It received two positive nominations and no strikethroughs. The only comment was "good option."

Route H—The pipe is tunneled under a busy intersection. Participants showed the most negative reaction to this option. It received four strikethroughs and no positive nominations. It was clearly viewed as a major disruption.

Route I—The pipe is placed under private property, not a public street. People were somewhat negative about this option. It received no positive nominations and two strikethroughs. One person mentioned that the legal battles in eminent domain situations could well increase the overall cost.

3.6 | Benefits of a New Water Pipeline

Participants considered potential benefits to Beaverton connected with the construction of a new water pipeline to deliver water to other communities. They answered an open-ended question and ranked specific benefits provided by the moderator.

Open-Ended Elicitation of Benefits

> *"Improvements to the roads and infrastructure in the area of the pipeline going through Beaverton would be a benefit to the city and to the people in that area."*
>
> *"Water is going to be an issue, so having additional sources of water could help Beaverton."*

When asked to identify benefits, participants found value for Beaverton in four main categories: improved water supply, jobs or economic growth, financial benefit to city or customers, and infrastructure improvements (Appendix G). Participants were asked to star the most important benefit. No one area stood out as the most important. Improved water supply and jobs or economic growth both received ten mentions, followed closely by financial benefits to the city or water customers (nine).

Improved Water Supply. Ten people mentioned a benefit related to the amount or quality of water available to the city. The most frequently cited benefit was access to more water when needed, reducing strain on the water supply. One person noted improving the infrastructure with newer, cleaner pipes might lead to a secondary benefit of cleaner water.

Jobs or Economic Growth. Ten people mentioned benefits related to economic growth. Seven people considered jobs a potential benefit, referring primarily to construction jobs. A few others mentioned more generally business development or growth.

Financial Benefits. Nine people mentioned some type of financial benefit to the city or residents. Six people mentioned financial benefit to the city, assuming that the city would receive some revenue from sharing the water or taxing land use rights. Four people mentioned financial benefits to residents through reduced water rates or lowered taxes.

Infrastructure Improvements. Seven people considered improvements to infrastructure a possible benefit, such as pipe upgrades or improvements to roads or sidewalks. Some specific improvements named included widening two-lane roads, adding bike lanes or sidewalks, or updating other systems (street runoff, sewer) at the same time.

Benefit Rankings

Participants were given a list of potential benefits associated with a water pipeline that serves other communities and asked to rank the top three benefits for Beaverton (Appendix H). Interestingly, although infrastructure improvements were not necessarily top of mind for participants at the beginning of the conversation (see above), improvements to Beaverton's water, sewer, and storm water lines stood out as the most highly ranked benefit when people considered the list of defined benefits. This benefit received four #1 rankings and twelve people nominated it somewhere in their top three. This is almost double the number of people choosing the next most highly rated benefit.

Other highly rated benefits were cost savings for Beaverton ratepayers, moving utility lines underground, and opening new areas for business expansion and jobs (these benefits received nominations from 5 to 7 people).

Midtier benefits included reconstructing or widening streets, restoring wildlife habitat along streams, repaving existing streets, or opening up new areas for residential development. Building new bicycle/pedestrian paths or park improvements resonated with just a few participants. Remaining benefits were chosen by only one or no participant.

Although restoring habitat and natural space improvements were not necessarily top tier benefits, the discussion revealed environmental issues were important to several participants. They expressed uncertainty over how to weigh practical needs with environmental benefits. One person described restoring habitat as a "*luxury*" given the need for some road improvements. Environmental impacts are important, just not necessarily prioritized over the immediate needs people see around them. Another noted that if "*you get the stormwater out, then that does actually improve some of the wildlife habitats and things….it just kind of helps all along the line.*" Connecting primary practical benefits to secondary environmental benefits will likely resonate with residents.

> "*If you have the environmental benefits that I have here, and then you have the repaving and reconstructing and widen streets, they could work very well together if you could put them together*."

3.6 | Concerns over Neighborhood Reservoir

Participants were asked their viewpoints on a proposed water reservoir in their neighborhood. They identified possible concerns via an open-ended question and ranked how well specific mitigating factors would help a reservoir fit in their neighborhood.

Open-Ended Concerns over Reservoir

People were most concerned about the immediate impact to their neighborhood throughout the process, starting from concern over the need to relocate existing homes or buildings, to traffic and noise related to the construction process (Appendix I). The next most common theme related to concerns over long-term maintenance. This ranged from general queries about who would be responsible for maintaining and protecting a reservoir, to more specific concerns about flooding in their homes if there were a problem. Although safety concerns were not identified frequently in the written exercise, people brought up safety issues repeatedly in the discussion. Concerns included keeping the water safe from contamination and limiting the potential for drowning.

Finally, aesthetic concerns came up for members in both groups. People had different ideas of what a reservoir would mean. Some envisioned a water tower, whereas others pictured something like Bull Run or Barney Reservoir. Still others envisioned some sort of in-ground pond, potentially covered. Generally speaking, they did not want to obstruct people's existing views and they wanted an aesthetically pleasing design that fits in with the neighborhood.

Benefit Rankings

Participants were given a list of common ways to mitigate or reduce the impact of water reservoirs. They were asked to rank the top three items which would help the reservoir fit in their neighborhood (Appendix J). Participants ranked building the reservoir to withstand a major earthquake the most highly. While this was important to them, they also felt that building codes and the engineers working on the project should cover this as a matter of course. Earthquake safety seemed more important in addressing potential safety concerns, and perhaps as something that should not need to be expounded, versus actually mitigating the drawbacks of a reservoir.

Mitigating factors that were important to people included protecting views, supporting road and storm water improvements, preserving open space, and incorporating or connecting to trails.

The various aesthetic options somewhat muddled together for participants. Several strategies, such as surrounding the reservoir with attractive landscape or setting it back from the street, received some nominations but few received broad support. One person noted, "*My two [*ranking*] was 'designed to blend in with setting.' I figured that covered all the others*." Aesthetics were important to them, although no specific strategy necessarily stood out.

3.7 | Final Messages

At the end of the focus groups, the participants were asked to write their final advice about expanding the water system to serve other communities (Appendix K). The most commonly-mentioned themes related to well-planned action, engaging the community, and costs. Participants wanted to see that planners considered carefully the effects on the community, were thoughtful with tax-payer money, and planned ahead. In addition, people wanted continued input into the process. Finally, people were concerned with the cost to themselves; not only financial cost, but also costs to them stemming from disruptions related to the construction process.

Well-Planned Action

"*Plan long-term; integrate projects with other utilities, services, etc.*"

"*Plan ahead in terms of capacity; let's get it right the first time for decades beyond what we might imagine*."

"*Balance future customer needs with current customer needs and concerns*."

Engaging the Community

"*Getting the community involved in developing future water needs is a great way to get ideas for how to develop a project that the community can be happy about*."

"*It will be important to get the community involved so they know why the city is undertaking this project*."

"*It is important to communicate to the neighborhoods better, during and after the project. I appreciate the depth of thought and planning that goes into these major undertakings*."

Cost

"*No additional costs to current community; keep it in existing budget*."

"*If it is needed, you have to construct it with cost savings*."

"*Cost effective, but done right!"*

"*Effect/time/cost of construction*."

"*My biggest concerns are customer/taxpayer cost and safety*."

Willamette Water Supply Program – Beaverton Focus Groups
Written Exercises

APPENDIX A: Demographics

CITY/ ZIPCODE	
Group A	**Group B**
Beaverton/ 97008	Beaverton/97008
Beaverton/ 97008	Beaverton/ 97008
Beaverton/ 97008	Beaverton/ 97008
Beaverton/ 97003	Beaverton/ 97007
Beaverton/ 97008	Beaverton/ 97007
Beaverton/ 97008	Beaverton/ 97005
Beaverton/ 97006	Beaverton/ 97008
Beaverton/ 97007	Beaverton/ 97008

YEARS IN OREGON	
Group A	**Group B**
17	24
34	22
23	11
8	32
50	5
34	18
29	14
18	135

OCCUPATION	
Group A	**Group B**
Full-time Student	NR
Executive Assistant	Wealth Manager
Administrator	Homemaker
Retired College Professor	Student/Unemployed
Financial Advisor/ Consultant	Administrative Assistant
Supervisor, Oregon Data Network Team	Currently Disabled
Electrical Engineer	Accountant
Target Team Member	Test Administrator

EDUCATION LEVEL		
	Group A	Group B
Less than HS grad	0	1
HS grad	2	0
Some college/2 year degree	2	2
College degree/4 year degree	2	1
Post college	2	4

HOUSEHOLD INCOME		
	Group A	Group B
Under $15,000	1	1
$15,000-$29,999	0	1
$30,000-$49,999	0	1
$50,000-$74,999	3	2
$75,000-$99,999	2	0
$100,000 +	1	3

*Note: Group A, Participant 1 answered "Don't know."

AGE		
	Group A	Group B
18-24	2	0
25-34	2	4
35-44	0	0
45-54	2	2
55-64	0	1
65-74	2	1
75+	0	0

GENDER		
	Group A	Group B
Male	7	3
Female	1	5

RACE/ETHNIC GROUP		
	Group A	Group B
White/Caucasian	6	8
Black/African American	1	0
Spanish/Hispanic	0	0
Asian/Pacific Islander	1	0
Native American	0	0

PARTY AFFILIATION		
	Group A	Group B
Democrat	5	3
Republican	2	2
Independent	1	3
Other	0	0
Not Registered	0	0

APPENDIX B: WE 1

Make a list of the improvements you would like your local community to do. Place a * by the most important issue. // Why is that the most important issue and what would you like done about it?

Group A

- *More awareness and emphasis on sexual assaults, "sexting" on college campuses and schools; food summer program held at public schools for children of families that can't afford to eat; drug use in schools – especially middle school and elementary; more emphasis on recycling in public buildings, or at least recycling bins. // I feel it needs to be addressed more; know friends of friends who are "quiet victims" – afraid nothing will happen, if they come forward.
- *Public education – grades K-12; mass transit/public transportation; city parks; college education – tuition fee reductions. // Education is most important to me because our community needs and educated work force to maintain a healthy economy. I would like smaller class sizes and focus on core subjects like math and science.
- *Roads; parks; schools; traffic flow. // Roads need repaving in some areas; stop signs need to transition to lights; roads that are dead ends should be completed; roads that are shared with bikes should be better marked.
- *Make Beaverton more pedestrian friendly – more crosswalks across Millikan Way and sidewalks on TV highway. // Too many cars bisect Beaverton with TV Highway and Farmington road. This divides the city and makes urban interaction difficult; Millikan Way needs crosswalks to create more neighborhood interaction around small businesses to the nature park and up to TV Highway.
- *Street lighting – neighborhood. // Safety and security; repairs have been slow to streetlight outings.
- *Legalization, regulation, and taxation of all vices; speed limits raised to 30 MPH; sales tax traded for income tax in Oregon.
- Don't have any. // I really can't think of any community-oriented improvements that I feel need improvement.
- I've always wanted to see a local rec center built that will keep kids out of trouble and gives them something fun to do. // Building a rec center for kids is important because it will keep kids off drugs and will being more positivity to their lives.

Group B

- *Slower driving; trash clean-up; street sweeper more than once a month; more police in area; minors closely watched by police and parents. // It's important because I have "little ones" who like to play outside and I need to know that they are safe. I'd like to see more police patrol and added speed bumps to keep drivers aware of kids playing. Possibly, signs posted.
- *Traffic; create soft skills trainings for underserved; make downtown more fun. // Traffic is terrible; more lanes; increased speeds; better timing system; right hand lane on surface streets should be "dedicated," or widened for people to turn right; decrease density.
- *Sidewalks and crosswalks more accessible; restrooms in/near public parks; Walmart. // I'm a mom with three young kids, but I am also in a wheelchair. Many times lack of accessible sidewalks has pushed us into busy streets and endangers my children. Also, sometimes the crossing signals aren't reachable, forcing me to cross unsafely (if lights aren't visible).
- *School tuition lowered for higher ed; class size at public schools; roads; public IT infrastructure; light rail; internet access as a utility. // Student loan debt has become a major drag on millennials' ability to establish financial independence. Also, it should be viewed as a public investment, not a private one.

- *City of Beaverton – working with small businesses in job creation, stop focusing on large employers; neighborhood watch program within Murray Hill; schools – now that bond measure has passed, make sure spending money as promised. // Large employers (Nike, Intel) seem to get so much attention from government tax breaks, etc., but how many jobs are they actually creating? Small employers create a lot more jobs and would make the community a lot healthier, if more people had well-paying jobs, a supposed to a few people with high-paying jobs. The community overall would be healthier, if more people had good jobs.
- *I would like to see more free and affordable recreation for kids and young adults; crosswalk time limits too short. // This is important to me because kids would have more things to do that intrigue them.
- *Downtown Beaverton; respectful riders on Trimet; parking lot at Beaverton TC. // More social life in Beaverton; coffee shops; walking area – sidewalks.
- *More (bumps) on railways to improve visibility during stormy times; better public transit, especially feeder lines to transit hubs. // Seeing during rainy times and dark nights can be difficult. Delineating lanes and bike areas is hard.

APPENDIX C: WE 2

How would you rate the quality of your drinking water at home: very good, good, poor, or very poor? // Why?

Group A

- Very good. // Traveling out of the country and even out of the state has made me realize how lucky we are here. In China and even in parts of Utah (where I spent most of my summer), we had to use water bottles for safety.
- Good. // The drinking water at my house is clear and does not taste bad. No bad smells come from my drinking water.
- Very good. // No boiling requirements – communities nearby had to boil water for drinking; the taste is good.
- Superb. // Beaverton water is the purest and best I've ever had anywhere in the world; those who manage it are terrific people.
- Good. // Clear; no foreign taste or smell.
- Very good. // I love it; tastes great; makes good ice; I spent some time away and my home tap water is ten times better than most other places.
- Good quality drinking water. // The water is clear in color with no taste. I've never been made sick from it and I haven't been informed of any chemical problems.
- Very good. // It's very refreshing and we never get cases of E.coli and things like that in Beaverton.

Group B

- Very poor. // Unsafe; smells funny; dingy color; past water problems; don't trust the tap water.
- Very good. // It's better than Tualatin Valley water district; clean; no boil alerts; top 100 in nation; flavorless.
- Poor. // Our water tastes bad and after sitting in a cup or water bottle for a few hours, it is nearly undrinkable. I do not know if it is city water or our old apartment building.
- Very good. // Good taste; high quality control; fluoridated.
- Very good. // It has no obvious taste or smells, so without doing any scientific testing to confirm, it just seems very pure. I used to live in Atlanta and the tap water there had a strong chlorine smell, so I was very happy to try the water here and find it didn't have that.
- Poor. // I'm not sure why it's so bad, but when I first turn on my water, I have to let it run for a few minutes so there is no bad color or smell.
- Very good. // My husband had traveled a lot outside the US. He said we have the tastiest water; I drink boiled water. It is better than in Ukraine.
- Good. // We use a Brita Filter to remove chemicals and improve tastes. It's okay from the tap but better filtered.

APPENDIX D: WE 3

What is the source (or sources) of your drinking water? // Write down any thoughts, feelings or opinions you have about the source of your drinking water.

Group A

- In the summer – Hag Lake; in the winter – rivers and parts of the JWC. // NR.
- The city of Beaverton provides my drinking water and that is all that I know. I know the water source is fresh water. // I want my water to come from a non-polluted source.
- Bull Run; the city of Beaverton. // Better than anywhere else I've lived or visited.
- Bull Run and reservoir. // Clean and tastes great; wonderful people manage this.
- Don't know. // No opinion.
- Hagg Lake. // I think what is done with the water is very well thought out engineering!
- I would guess maybe the Bull Run table? // No opinion.
- City of Beaverton, I think. // I should really know about where our drinking water comes from because it's important.

Group B

- Tap water – river. // I believe it's filtered from the river water.
- Reservoir on Murray; clean water system. // I'm all good with it; clean water services is interesting.
- Beaverton City Water; reservoir; rain. // If, as it is properly filtered.
- Bull Run Reservoir. // Consistently high quality.
- Don't know the source, but I know it's different than Tigard/Portland. // No opinions.
- I don't know; I would guess that it came from Bull Run. // I feel that the Bull Run reservoir should be covered for safety.
- Tualatin River; I did research before the meeting.
- I think Hagg Lake, but unsure. // Glad it's not the lower Tualatin River. The closer to mountains, the better – less opportunity for environmental pollutants.

APPENDIX E: WE 4

Make a list of any issues or concerns you have about a new water pipeline through Beaverton. Place a star (*) next to your biggest concern.

Group A

- *Would buildings have to be destroyed to get access to the ground; more road traffic issues; positive – new jobs; how long it would take; how will it help?
- *Traffic congestion; cost of the project; amount of time needed to complete the project.
- Source of water – Willamette; pipeline for supplementing water supply shows good forward thinking; this would be good if one source becomes contaminated – optional source is evidence of good planning.
- *Make pipeline work the least disruptive yet with high safety concerns; make sure the quality and size of the pipeline is excellent.
- Will pipeline pass through private property? If yes, will property owners be compensated?
- *Wasted money; traffic disruption; no need; stupid plan; Willamette is already overtaxed.
- *Who's gonna pay for it; what's the environmental/community effect (traffic, etc.); joint benefits; do we vote on source; how long will it take?
- My only real concern is how well they filter the water. We don't want discolored water that will cause diseases.

Group B

- Construction; traffic.
- *Additional cost/budget; traffic.
- *Sediment/contaminants from working on lines; cost to customers; need, or selling water.
- *Interfering with other potential public services/utilities; traffic disruption during construction; electrical/utility disruption during construction.
- Willamette River as a source – sounds questionable as that river is usually thought to be polluted due to agriculture runoff; if it guarantees a reliable source of water during global climate instability, it must be done and we have to live with it; [Unclear word] to make other changes while roads are turn up to address traffic issues; multiple jurisdictions not cooperating in planning, inefficient.
- The only concern that I have is that is the water still safe to drink, after all the chemical and filtering process?
- *Will cost increase for us; who are the new customers?
- *Route; safety of line – vandalism, etc.; disruption of current infrastructure; my water taste.

APPENDIX F: WE 5

Handout description of types of routes. These give a brief description of typical places where water pipelines are constructed. Instruct participants to underline anything that they find positive, strike out anything that they find negative, and put a question mark by anything they are unsure about. After reading/reviewing each, have the participants write their reactions and any changes they would recommend to improve the routes.

	GROUP A		GROUP B	
Route Description	**Positive (Underline)**	**Negative (Strike Out)**	**Positive (Underline)**	**Negative (Strike Out)**
Route A – The pipe is placed under a wide boulevard fronted by multiple businesses, apartment complexes, and homes. The street has sidewalks on both sides and bike lanes.	2	1	0	0
Route B – The pipe is placed along unimproved two-lane road bordered by farms and undeveloped land.	2	1	3	0
Route C – The pipe is placed under a street in a neighborhood.	1	0	2	0
Route D – The pipe is placed under a frontage road bordered by a mix of commercial and industrial businesses. Some parts of the road have sidewalks, but no dedicated bike lanes.	0	2	2	0
Route E – The pipe is placed under a pedestrian trail.	4	0	1	1
Route F – The pipe is placed in the ground at the same time a new road is built.	6	1	6	0
Route G – The pipe is placed under a two-lane road fronted by warehouses and distribution centers. Some of the roads have sidewalks on both sides.	1	0	1	0
Route H – The pipe is tunneled under a busy intersection.	0	3	0	1
Route I – The pipe is placed under private property, not a public street.	0	1	0	1

	QUESTIONS AND COMMENTS	
Route Description	**Group A**	**Group B**
Route A – The pipe is placed under a wide boulevard fronted by multiple businesses, apartment complexes, and homes. The street has sidewalks on both sides and bike lanes.	• Will this disrupt the people? • I think sidewalks and bike lanes are important.	• Neutral. • Block access? • Most disruptive.
Route B – The pipe is placed along unimproved two-lane road bordered by farms and undeveloped land.	• Is there another route for those who live there to take temporarily?	• No damage to road/sidewalks or blocking • Good option. • As city grows, won't stay undeveloped for long.
Route C – The pipe is placed under a street in a neighborhood.		• I'm okay with this. • Ok, access to neighborhood homes/kids. • Water seems more benign than petroleum gas. Would they mind? Unless their basement floods during construction.
Route D – The pipe is placed under a frontage road bordered by a mix of commercial and industrial businesses. Some parts of the road have sidewalks, but no dedicated bike lanes.	• Harder for people to travel around.	• Sure. • Ok, as long as access to businesses. • Good option, depending on local use/ends.
Route E – The pipe is placed under a pedestrian trail.	• Best because least disruptive.	• No sidewalk/paved, ok. • Already have petroleum gas there.
Route F – The pipe is placed in the ground at the same time a new road is built.	• Will this increase the time? • Congestion and delays. • Joint benefit.	• Best. • Ideal, not always possible or realistic. • Unlikely to find where needed.
Route G – The pipe is placed under a two-lane road fronted by warehouses and distribution centers. Some of the roads have sidewalks on both sides.		• Good option.

Route H – The pipe is tunneled under a busy intersection.	• Lots of disruption, I feel. • Would this cause too much traffic congestion? • Problems – big delays and work at night?	• Grunt. • Traffic concerns. • Major disruption during construction.
Route I – The pipe is placed under private property, not a public street.	• Again, will this affect the people living there? • Concerned about damage to private property.	• With permission or mandated? • Not unless owner is agreeable and fairly compensated. • Not personal problem, but usually expensive due to legal issues. • This sounds like a bad idea. The property owners could exert too much influence, asking city for too much money for maintenance, access, etc.

APPENDIX G: WE 6

When a new water pipeline is constructed to deliver water to other communities, how could it benefit Beaverton? Put a star (*) next to the most important benefit.

Group A

- *More companies can be built off the new water pipeline; less chance we will "run out" of water (not that I know we are); less cost on water bills?
- *Possible revenue source for the city; jobs – create new jobs for construction; might be able to be used as an emergency backup water source by Beaverton; might help develop businesses in nearby communities that could employ Beaverton residents.
- *New pipes are less vulnerable to contamination and disrepair; Beaverton may have more water available to them.
- *This depends on where it is constructed and where it is going to; it could result in more businesses and more jobs; it could result in damage and delays for no benefit to Beaverton.
- Reduce Beaverton water rates, assuming water is taken from Beaverton resources.
- *The project could pay for improvements to roads and infrastructure; the city could tax for land use rights.
- Beaverton construction contractors and jobs; Beaverton suppliers; businesses, food, and entertainment for workers influxed into the area; new installations in conjunction with pipeline construction; land revenue.
- *It may lower taxes and provides more water to the community.

Group B

- Just financial gain for the city; I see no benefits to the existing community.
- *Reduce potential strain on our water; it feedback to Beaverton the switching water sources during "boil alerts;" going through Beaverton – jobs and local economy; growth of nearby community good for our commerce too.
- *I suppose if Beaverton is receiving compensation for the water (assuming it is Beaverton water being shared), that could be used to better provide for the city needs and relieve tax payers' burden; if water shortage occurred, more water available, perhaps?
- *Free up water sources that were previously shared; local infrastructure spending; secondary economic activity (temporary workers spending money here).
- If neighboring communities have a reliable source of water, there could be less pressure on Beaverton if some of their sources are shared. This might only apply in a crisis. Given the future of global climate instability, this is probably something the city needs to be considering.
- *The city might benefit by having roads and sidewalks replaced, when torn up to place pipes underground; add more jobs; could bring in revenue.
- *Cleaner water – new pipes, new technology; reduced cost?
- *Construction jobs; possible infrastructure improvements; less population pressure on Beaverton H2O.

APPENDIX H: WE 7

Here is a list of potential benefits to Beaverton for a new water pipeline that serves other communities. Rank the top three benefits. Add any comments below the list.

	Group A				Group B				
Benefit Description	**Rank 1**	**Rank 2**	**Rank 3**	**Weighted Sub-Total**	**Rank 1**	**Rank 2**	**Rank 3**	**Weighted Sub-Total**	**Weighted TOTAL**
Upgrade Beaverton's water, sewer, and storm water lines	1	3	1	10	3	2	2	15	25
Cost savings for Beaverton ratepayers	1	1	0	5	2	1	1	9	14
Move utility lines (power, phone, cable) underground	1	1	0	5	2	0	1	7	12
Open new areas for business expansion and jobs	1	1	3	8	0	1	1	3	11
Reconstruct and widen streets	1	0	2	5	0	1	1	3	8
Restore wildlife habitat along nearby streams	1	1	0	5	0	0	1	1	6
Repave existing streets	0	0	0	0	1	1	0	5	5
Open up new areas for residential development	1	0	0	3	0	1	0	2	5
Build new bicycle and pedestrian paths	0	0	1	1	0	1	1	3	4
Expand or improve existing parks	0	1	1	3	0	0	0	0	3
Build new parks or open space	1	0	0	3	0	0	0	0	3
Improve neighbors' driveways and sidewalks along the pipeline route	0	0	0	0	0	0	0	0	0
Construct new streets to serve Beaverton residents and employers	0	0	0	0	0	0	0	0	0
Plant trees along the pipeline route	0	0	0	0	0	0	0	0	0

Weighted Ratings: 1=3 points, 2=2 points, 3 = 1 point

Group A Comments

- Some of these contradict each other; there are disadvantages to some of these benefits as well.
- Two types of benefits – environment and practical?

APPENDIX I: WE 8

If a water reservoir was proposed for your neighborhood, what concerns would you have? Make a list of any issues or concerns you have. Place a star (*) next to your biggest concern.

Group A

- *Will there be there be need of [unclear word] homes/buildings for reconstruction; how will it affect the neighborhood?
- *Will people be required to relocate their homes; where is the reservoir going to be located; will there be any damage to private property; if the reservoir were to overflow, what would happen to the excess water?
- *View – obstruct, eye sore; security.
- *Where would it be placed; how would it be constructed; how would it be financed; who would build it; how would it be maintained and protected?
- *Proximity to my home; disruption to neighborhood travel; who pays the cost.
- *Construction side effects; construction noise and dirt; trucks rumbling from neighborhood; worth people being rude; any sort of industrial spillage.
- *Placement of reservoir; don't know about potential hazards or nuisances; closed large area; recreation.
- *My major concern is how clean the water will be; how does it work; scarcity, will it be able to provide water to the whole community?

Group B

- Elevation; maintaining.
- *Aesthetics; views.
- *Safety – do children and pets have access? Uncovered?
- *Traffic disruption; utility disruption; noise level; wildlife disruption.
- Obviously, I would not want it to be situated where my house could get flooded if it broke; in general, I think it would be positive for the neighborhood – a guaranteed open area that would not be developed; if there would be a reservoir, it would not be more houses, more congestion.
- If the pipe had to go through my property; how would it affect traffic and what would they do to compensate for that (would they have a flagger on site)?
- *Construction time affecting my life; maintenance of the site.
- *High visibility – cute design on tower; danger of breaking; I have two fairly close – no issues.

APPENDIX J: WE 9

Here is a list of common ways the impacts of water reservoirs can be mitigated or reduced. Which of these items do you think would help the reservoir fit in your neighbor? Rank the top three mitigation measures. Add any comments below about the list.

	Group A				Group B				
Impact Description	Rank 1	Rank 2	Rank 3	Weighted Sub-Total	Rank 1	Rank 2	Rank 3	Weighted Sub-Total	Weighted TOTAL
Built to withstand a major earthquake	3	2	0	13	3	2	1	14	27
Neighbor's views protected	1	0	1	4	2	1	0	8	12
Project supports area road and storm water improvements	1	2	2	9	1	0	0	3	12
Reservoir site preserves open space	1	0	2	5	1	1	0	5	10
Site incorporates trails; connects to other trails	1	1	1	6	0	0	2	2	8
Reservoir surrounded by attractive landscape/garden	0	0	2	2	0	1	1	3	5
Designed to build in with setting	0	1	0	2	0	1	1	3	5
Neighbors engaged in site design	0	1	0	2	0	1	1	3	5
Reservoir set back from street; buffered by neighbors	1	0	0	3	0	0	1	1	4
Reservoir buried or partially buried underground	0	0	1	1	0	1	1	3	4
Reservoir site includes playground	0	0	0	0	1	0	0	3	3
Reservoir screened from residences by trees/ shrubs/landscape berm	0	1	0	2	0	0	0	0	2
Reservoir name chosen by students from neighborhood schools	0	0	0	0	0	0	0	0	0

Weighted Ratings: 1=3 points, 2=2 points, 3 = 1 point

*Note: Participant 1 in Group A ranked two mitigation measures '3.'

Group A Comments

- These two different mitigation themes must be compatible – aesthetics and environment; must be practical and neighborly.

APPENDIX K: WE 10

What is your final advice about developing an additional source of water to meet customers' future water needs?

Group A

- Consider the amount of effect it will create for local neighborhoods and companies; awareness to the people of the reason and benefits of this new construction; consideration of effect/time/cost of construction; safety.
- I think that getting the community involved in developing future water needs is a great way to get ideas for how to develop a project that the community can be happy about. However, more technical details of the project, such as what materials should be used for construction and how the materials should be installed should be left to the engineers and other skilled professionals, so the project is constructed well and lasts a long time.
- It is important to communicate to the neighborhoods better, during and after the project. I appreciate the depth of thought and planning that goes into these major undertakings.
- A brilliantly run symposium – We have learned that a water source must be environmentally friendly and meet neighborhood needs, which are equally important and must be compatible. The practical and the environmental must be in balance and in harmony.
- Consider deep well to tap into underground resource. If no underground resource, then begin process to site reservoir and pipeline route. Construction bids should be prohibited to Oregon contractors.
- Cost effective, but done right! If the water source needs to be purified before it is stored, that must be done to make sure that water maintains is purity and drinkability. Water is still not revered by the average American because there has been an abundant supply. We are very lucky here in Beaverton and Washington County area to have a very good JWC that has designed and maintained the water system.
- It's important to communicate with communities affected and make sure to bring benefits (the bare essential being more water service), including jobs, new utility and construction amenities, through to minimal disruption of traffic, property values, neighborhood views, and living flow.
- Make sure it is in the perfect area where it does not disrupt transportation, businesses, or the neighborhood. Keeping it underground is always best. Make sure it is technologically advanced, so that water is safe and filtered. Does not disrupt wildlife. Build it to only benefit the environment.

Group B

- Depending on additional water source for our future needs. I understand we may need more water with our growing communities, but I am not excited about the source you plan on pulling the water from – Willamette. I agree we need an additional backup source in case we have contaminated water, we just "flip a switch" and pull from a cleaner source until water is free of contamination.
- No additional costs to current community; keep it in existing budget; show community benefits and keep community engaged in the process; plan ahead in terms of capacity; let's get it right the first time for decades beyond what we might imagine.
- Balance future customer needs with current customer needs and concerns; efficient construction is very important with our current traffic; my biggest concerns are customer/taxpayer cost and safety, both driving and after any construction; thank you for getting our feedback on this project.

- Plan long-term; integrate projects with other utilities, services, etc.; explore new conceptual approaches, new technologies; confront NIMBY's head-on (not in my backyard); minimize environmental impact.
- It will be important to get the community involved so they know why the city is undertaking this project. There might be more issues in the construction, but if people understood the importance of long-term water planning, they would be more cooperative during the disruption phase. It might be a good opportunity to make some traffic improvements, when roads are already torn up, which would help residents buy into the project.
- My advice to develop a new water source would be to take into consideration what other things could be improved at the same time to be more cost effective.
- If it is needed, you have to construct it with cost savings; protect owners' property rights; good luck!
- First, maximize "close to the source" resources; water that is less "downstream" has fewer chances for pollutant sources; water sources must be cost-benefit considered; potable water can be made from many sources and Tualatin and Willamette waters must be considered; incentives for recycling and gray and rain water use should be considered.